CLMPTO

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1. (Amended) A liquid lubricant composition, comprising

(i) a paraffinic biodegradable hydrocarbon basestock component having a biodegradability of at least 50% (OECD 301B) and having a pour point of from about -25°C to -55°C and a viscosity index of 130 to 160, in which the extent of branching, as measured by the percentage of methyl hydrogens (BI), and the proximity of branching, as measured by the percentage of recurring methylene carbons which are four or more carbons removed from an end group or branch (CH_2>4), are such that:

(a) $BI - 0.5(CH_2>4) > 15$; and

(b) $BI + 0.85(CH_2>4) < 45$;

as measured over said hydrocarbon basestock as a whole, and

(ii) additives soluble in the basestock comprising a detergent and an antioxidant,

the liquid lubricant composition having a CCS viscosity at -15°C of not more than about 3500 cP and a kinematic viscosity at 100°C of not less than about 5 cSt.

2. The liquid lubricant composition of claim 1, wherein a combination of dynamic viscosity (DV), as measured by CCS viscosity at -40°C, and kinematic viscosity, as measured at 100°C, of said paraffinic biodegradable hydrocarbon basestock is:

$$DV_{@-40°C} < 2900(KV_{@100°C}) - 7000.$$

3. The liquid lubricant composition of claim 1, wherein MRV viscosity as measured at -30°C of said paraffinic biodegradable hydrocarbon basestock is not more than about 60,000 cP, with a yield stress of not more than about 35 cP.

4. The liquid lubricant composition of claim 3, wherein MRV viscosity as measured at -40°C of said paraffinic biodegradable hydrocarbon basestock is not more than about 60,000 cP, with a yield stress of not more than about 35 cP.

Claim 5 canceled.

6. (Amended) The liquid lubricant composition of claim 1, wherein the viscosity index of said paraffinic biodegradable hydrocarbon basestock is from about 140 to about 160.

7. The liquid lubricant composition of claim 1, wherein the pour point of said paraffinic biodegradable hydrocarbon basestock is less than about -30°C.

8. The liquid lubricant composition of claim 7, wherein MRV viscosity as measured at -35°C of said paraffinic biodegradable hydrocarbon basestock is not more than about 60,000 cP, with a yield stress of not more than about 35 cP.

9. The liquid lubricant composition of claim 7, wherein viscosity index of said paraffinic biodegradable hydrocarbon basestock is from about 140 to about 160.

10. The liquid lubricant composition of claim 7, wherein the pour point of said paraffinic biodegradable hydrocarbon basestock is from about -30°C to about -45°C.

11. The liquid lubricant composition of claim 1, wherein the pour point of said lubricant composition is less than about -20°C.

12. The liquid lubricant composition of claim 11, wherein the pour point of said lubricant composition is less than about -30°C.

13. The liquid lubricant composition of claim 11, wherein the pour point of said lubricant composition is from about -35°C to about -60°C.

14. The liquid lubricant composition of claim 1 which conforms to SAE 0W low-temperature viscosity grading, and which has CCS viscosity at -30°C of not more than 3250 cP, and MRV viscosity at -40°C of not more than 60,000 cP.

15. The liquid lubricant composition of claim 14 further comprising a polymeric viscosity modifier.

16. The liquid lubricant composition of claim 15 which conforms to SAE 0W-40 grading and which has a kinematic viscosity at 100°C of from 12.5 cSt to less than 16.3 cSt, comprising from about 0.05 to 30 wt% of the polymeric viscosity modifier and wherein the paraffinic biodegradable hydrocarbon basestock has a kinematic viscosity at 100°C of from about 3.5 cSt to about 5.0 cSt.

17. The liquid lubricant composition of claim 16 having a pour point no higher than about -40°C.

18. The liquid lubricant composition of claim 15 which conforms to SAE 0W-30 grading and which has a kinematic viscosity at 100°C of from 9.3 cSt to less than 12.5 cSt, comprising from about 0.01 to about 25 wt% of the polymeric viscosity modifier and wherein the paraffinic biodegradable hydrocarbon basestock has a kinematic viscosity at 100°C of from about 3.5 to about 5.0 cSt.

19. The liquid lubricant composition of claim 18 having a pour point no higher than about -40°C.

20. The liquid lubricant composition of claim 19 having a CCS viscosity at -30°C of not more than about 3000 cP.

21. The liquid lubricant composition of claim 1 which conforms to SAE 5W low-temperature viscosity grading, and which has CCS viscosity at -25°C of not more than 3500 cP, and MRV viscosity at -35°C of not more than 60,000 cP.

22. The liquid lubricant composition of claim 21 further comprising a polymeric viscosity modifier.

23. The liquid lubricant composition of claim 1 which conforms to SAE 10W low-temperature viscosity grading, and which has CCS viscosity at -20°C of not more than 3500 cP, and MRV viscosity at -30°C of not more than 60,000 cP.

24. The liquid lubricant composition of claim 23 further comprising a polymeric viscosity modifier.

25. The liquid lubricant composition of claim 1 which conforms to SAE 15W low-temperature viscosity grading, and which has CCS viscosity at -15°C of not more than 3500 cP, and MRV viscosity at -25°C of not more than 60,000 cP.

26. The liquid lubricant composition of claim 25 further comprising a polymeric viscosity modifier.

27. The liquid lubricant composition of claim 26 which conforms to SAE 15W-50 viscosity grading and which has a kinematic viscosity at 100°C of from 16.3 cSt to less than 21.9 cSt, comprising from about 0.1 to about 25 wt% of the polymeric viscosity modifier and wherein the paraffinic biodegradable hydrocarbon basestock has a kinematic viscosity at 100°C of from about 5.5 cSt to about 14.0 cSt.

28. The liquid lubricant composition of claim 27 having a pour point no higher than about -35°C.

29. The liquid lubricant composition of claim 28 having a CCS viscosity at -30°C of not more than about 3300 cP.

30. The liquid lubricant composition of claim 1 which conforms to SAE "xW-y" viscosity grading, where x = 0, 5, 10, or 15, and where y = 10, 20, 30, or 40, and where (y - x) is less than or equal to 25.

31. The liquid lubricant composition of claim 1, wherein said paraffinic hydrocarbon components have BI greater than 26.1 and CH_2>4 less than 22.2.

32. The liquid lubricant composition of claim 1 further comprising a lubricating oil basestock component comprising an ester or an alkylated aromatic or mixtures thereof.

33. The liquid lubricant composition of claim 32 wherein the ester is an ester of a polyol alcohol and a monocarboxylic acid having a kinematic viscosity at 100°C of about 2 cSt to about 8 cSt, and the alkylated aromatic is an alkyl naphthalene having a mono alkyl substituent group of about 10 to about 20 carbon atoms having a kinematic viscosity at 100°C of about 2 cSt to about 8 cSt.

34. The liquid lubricant composition of claim 32 having from about 5 wt% to about 20 wt% of the ester or alkylated aromatic or mixture thereof.

35. The liquid lubricant composition of claim 1 wherein the antioxidant is an aromatic amine or an alkylated phenol or mixtures thereof.

36. The liquid lubricant composition of claim 1 wherein the detergent is an alkali or alkaline earth sulfonate, or an alkali or alkaline earth salicylate, or alkali or alkaline earth phenate, or mixtures thereof.

37. The liquid lubricant composition of claim 1 which conforms to SAE 0W-20 viscosity grading and which is formulated as a non-viscosity modified oil containing no viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-30°C) of not more than 3250 cP.

38. The liquid lubricant composition of claim 1 which conforms to SAE 5W-20 viscosity grading and which is formulated as a non-viscosity modified oil containing no viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-25°C) of not more than 3500 cP.

39. The liquid lubricant composition of claim 1 which conforms to SAE 10W-30 viscosity grading and which is formulated as a non-viscosity modified oil containing no viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-20°C) of not more than 3500 cP.

40. The liquid lubricant composition of claim 1 which conforms to SAE 0W-30 viscosity grading and which is formulated as a viscosity modified oil comprising viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon

basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-30°C) of not more than 3250 cP at -30C.

41. The liquid lubricant composition of claim 1 which conforms to SAE 5W-40 viscosity grading and which is formulated as a viscosity modified oil comprising viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-25°C) of not more than 3500 cP. 41.

42. The liquid lubricant composition of claim 1 which conforms to SAE 0W-40 viscosity grading and which is formulated as a viscosity modified oil comprising viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-30C) of not more than 3250 cP.

43. The liquid lubricant composition of claim 1 which conforms to SAE 5W-50 viscosity grading and which is formulated as a viscosity modified oil comprising viscosity modifier polymer, in which (i) the paraffinic biodegradable hydrocarbon basestock has a pour point from -30° to -45°C, a viscosity index from 130 to 140, (ii) the composition has a CCS (-25°C) of not more than 3500 cP.